Clean Copy Of The Pending Claims

44. A surgical system comprising:

a hollow elongate instrument, having at least one lumen suitable for receiving an optical fiber, and being maneuverable to provide a conduit for transmission of laser energy to a surgical site; and

a flexible, elongate fiber for conducting laser energy from a proximal end of said fiber to a surgical site at a distal end of said fiber, the proximal end suitable for receiving laser energy, and said fiber being a silica fiber having a low hydroxyl ion content to reduce absorption of laser energy at a wavelength of about 1.4-2.2 micrometers.

45. The system of claim 44, wherein said fiber is suitable for coupling with and conducting energy of a Holmium-doped Yttrium-Aluminum-Garnet laser.

46. The system of claim 44, wherein said fiber is suitable for coupling with and conducting energy of a Erbium-doped Yttrium-Aluminum-Garnet laser.

47. The system of claim 44, wherein said fiber is suitable for coupling with conducting energy from a Thulium-doped Yttrium-Aluminum-Garnet laser.

48. The system of claim 44, wherein said fiber is suitable for coupling with and conducting energy from a Holmium-doped Yttrium-Lithium-Fluoride laser.

49. The system of claim 44, wherein said fiber is suitable for coupling with and conducting energy from a Erbium-doped Yttrium-Lithium-Fluoride laser.

Clean Copy Of The Pending Claims (continued)

50. The system of claim 44, wherein the said fiber is suitable for conducting pulsed laser energy.

51. The system of claim 44, wherein the said fiber is suitable for conducting pulsed wave laser energy sufficient to remove biological tissue by vaporization.

52. The system of claim 44, wherein said fiber is suitable for conducting laser energy with a pulse width of 0.2-5 milliseconds.

53. The system of claim 44, wherein said fiber is suitable for conducting pulsed laser energy at a repetition rate of about 1 to about 10 pulses per second.

54. The system of claim 44, wherein said fiber is suitable for delivery of energy to a surgical site of at least 0.57 millijoules per pulse.

55. The system of claim 44 wherein the fiber is suitable for conducting continuous wave radiation.

56. The system of claim 55 wherein the fiber is suitable for to photocoagulate tissue.

57. The system of claim 44 wherein the hollow elongate instrument is a catheter.